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Supreme Court, U.S.
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IN THE

Supreme Court of the United States

October Term, 1958

No. 506

ZOOMAR, INC.,

Petitioner.

v.

PAILLARD PRODUCTS, INC.,

Respondent.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

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IN THE

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OCTOBER TERM, 1958

No. .....

ZOOMAR, INC.,

Petitioner,

v.

PAILLARD PRODUCTS, INC.,

Respondent.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

Petitioner prays that a writ of certiorari issue to review the decision and judgment of the United States Court of Appeals for the Second Circuit in this case entered on August 18, 1958.

Opinions of the Courts Below

The opinion of the District Court (Irving R. Kaufman, D. J.), is reported officially in 152 F. Supp. 328 and unofficially in 113 U. S. P. Q. 469 and is printed in Appendix B, *infra*, page 1b. The opinion of the Court of Appeals is not yet officially reported and is unofficially reported in 118

U. S. P. Q. 392 and is printed in App. B at page 30b. The judgment of the District Court entered thereon is printed in App. B at page 36b.

Jurisdiction

The jurisdiction of this Court is invoked under 28 U. S. C., §1254(1). The Court of Appeals rendered its decision on August 18, 1958. The judgment of the District Court was entered thereon on September 18, 1958.

Questions Presented

Was it the intention of Congress in the Patent Act of 1952 (35 U. S. C.) to modify and relax the recent doctrinal trend of the Supreme Court which insisted on a very strict and severe standard of invention to validate a patent; and to change such standard to the more liberal one as evidenced by an older series of cases of the Supreme Court? If so, has the Patent Act accomplished this intention? Has not the Court of Appeals refused to apply such standard, thereby perpetuating court-made doctrinal law as against contrary Congressional intent?

Statutes Involved

The provisions of the Patent Act which are involved are printed in Appendix A, *infra*. They are contained in Sections 100 (b), 102 (a)(b)(e), 103 and the first sentence of §282.

Statement of the Case

Petitioner sued for an injunction and damages, claiming that respondent infringed its U. S. Patent Numbers 2,454,686 (herein referred to as 686) and 2,718,817, which

latter is merely an improvement over 686 and is not involved in this petition and not specifically passed upon by the Court of Appeals.

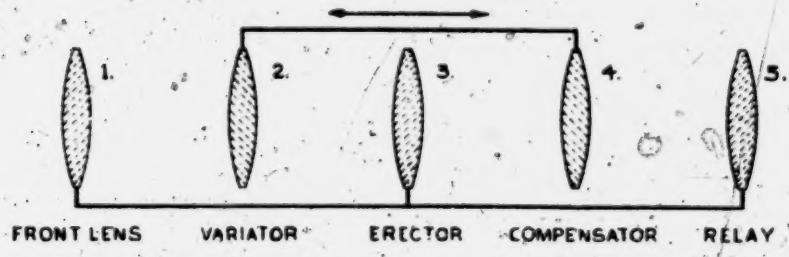
Patent 686 (issued in 1946) is for a varifocal lens for cameras. A varifocal lens is one whose focal length can be varied continuously while the image remains in focus on the focal plane (the film). Simply stated, this means that the image of the object can be magnified or reduced in size continuously and remain in focus, so that in a motion picture (or television) the object being photographed appears to be coming closer to or going further away from the camera and still remains in focus as a sharp image. Without a varifocal lens, such a zoom effect can only be achieved by wheeling the camera towards or away from the object, which not only requires constant refocusing, but in many cases cannot be done.

The principal of a varifocal lens is based upon the physical law, known for many years, that as spacing between two optical elements is changed, the combined power also changes, and this produces magnification or reduction of the image of the object. However, with the change of power the position of the focal plane also changes, so that as the spacing between the optical elements is changed, the image of the object leaves the film plane and is then out of focus. The purpose of the varifocal lens is to "compensate" for image deviation so that the image remains in focus on the film during the zoom.

Prior to 686, and the appearance of petitioner's device (Pl. Ex. 6), termed herein "Zoomar lens", the only varifocal lenses for motion picture use were those "mechanically compensated". The compensation for image deviation was accomplished by complicated mechanical devices, using gears, screws, cams, levers, etc., so that as some of the lenses (which changed the size of the image) are moved with respect to each other, this combination of lenses is

moved with reference to other lenses in order to keep the image stationary. Illustrations of these complicated devices are shown in Exhibit "E".[1] The testimony is clear and undisputed, that prior to 686 (the Zoomar lens), these mechanically compensated lenses were unsuccessful, very few were produced, and none marketed to any great extent commercially. These devices were extremely costly to make and the wearing away of the mechanical linkage threw the image out of focus. Respondent did not contend at the trial, nor have the courts below found that the mechanically compensated lenses were anticipation of Zoomar. Actually, before the appearance of the Zoomar lens, there was no practical and commercially successful varifocal lens produced anywhere in the world.

In 686, Dr. Back taught that compensation for image shift can be accomplished by optical rather than mechanical means, and showed how it could be accomplished. He originated a 5-lens group, the first, third and fifth of which were stationary; and the second and fourth were stationary relative to each other, but moveable relative to the first, third and fifth. The following is a simplified diagram of the device:



[1] 491. References are to pages in appendix to petitioner's brief in Court of Appeals.

In the above diagram, lens 1 (front lens) serves to focus the camera on objects closer than infinity and determines the absolute power range of the system and also helps for closeup focusing. As respondent's witness testified, the first lens group "sets up" the image of the object for the zoom.[2] The second lens (variator), by its movement, varies the size of the image. (However, the plane in which the image is in focus also moves).[3] The third lens (erector) turns around the image presented to it by the second lens.[4] The 4-lens group (compensator) freezes the image in one plane.[5] The fifth lens group (relay) takes the image where it is left by the fourth lens "somewhere in space", and puts the image, as a real inverted image, on the film plane where it remains substantially in focus. The fifth group not only reduces the image shift, but in addition contains the aperture stop (iris diaphram) of the system, so that the amount of light reaching the film is constant regardless of the movement of the moveable lenses (2 and 4).[6]

State of the Art.—Evidence was introduced (uncontradicted) that prior to the appearance of the Zoomar lens in 1946 there was no usable varifocal lens in existence anywhere in the world, except for a few highly complicated mechanically compensated lenses, that were not much good.[7] After the appearance of Zoomar, the evidence shows that experienced lens designers hailed it as something entirely new and as an important advance in the art. Kingslake, Chief Optical Designer for Eastman Kodak,

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[2] 368.

[3] 89-91.

[4] 91.

[5] 91, 208, 370.

[6] Pat. '686, col. 4, ll. 62-74; 118-9; 208.

[7] Exs. 16, 17; 199, 200.

and formerly Dean of the Optical University in Rochester, wrote in an article for the London Conference on Optical Instruments (1950):

> "A new zoom lens known as the Zoomar has recently appeared on the American market, which represents *a complete departure from previous attempts to make a varifocal lens.*"[8]

At the same conference, Hopkins, who was Professor of Optics at the Imperial University in London, referred to plaintiff's device as "a lens of complex but novel construction".[9] In 1951, Kingslake published a book entitled "Lenses in Photography", in which he said:

> "* * * the extreme difficulty of both designing and manufacturing a sufficiently well-corrected zoom lens has made them almost non-existent until quite recently. Even today, *the best known zoom lens, the Zoomar*, for 16 mm photography embodies 22 separate lens elements, while for 35 mm cameras it contains even more. *It is hard enough to design a fixed lens with adequate definition for most purposes, and the difficulties of designing a system in which one part of the lens may be moved relative to another part to change the focal length, are well-nigh insuperable.*"[10]

These articles were written by men not connected with the petitioner or the inventor. Petitioner's expert, Kaprelian, a lens designer, who had previously attempted optical compensation without success, testified that Zoomar was the first optically compensated lens for motion picture and

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[8] Ex. 18; 466. All italics in brief are ours.

[9] P. 22 of Ex. 18.

[10] Ex. 19; 468.

television use. He said "it was accepted generally as an important device in the art" and he "considered it an outstanding contribution to photographic optics", and "an entirely new approach", and "the theory is entirely different".[11]

Experts in the industry who use the lens wrote of its revolutionary effect and design. John H. Batterson, in "Movies for TV" (1950), an engineer in motion picture production, wrote:

> "*No chapter on lenses would be complete without a description of the famous Zoomar lens* • • •. This unique lens permits a cameraman to cover almost any type of shot with only the one lens."[12]

Scott Helt, research engineer with Dumont, in "Practical Television Engineering" (1950), wrote how Zoomar "eliminated many of the mechanical difficulties" known in the past and how "it does the work of three lenses".[13] Rudy Bretz (a television consultant), wrote in "Techniques of Television Production" (1953), referring to the Zoomar lens:

> "*This unique* lens is probably the most important accessory to be added to standard TV equipment."

He also showed the tremendous advance the lens made in the industry in its various applications to different types of motion picture work. In 1948, just two years after the appearance of Zoomar, Dr. Back, the inventor, received a gold medal from the American Broadcasters

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[11] 195, 205.

[12] Ex. 20; 470.

[13] Ex. 21; 472.

Association for the introduction and invention of this lens.[15]

In addition to this evidence, witnesses were produced who were expert cameramen for motion pictures, television and cinephotomicography. They testified to the "*terrific*" effect produced by the Zoomar lens which could not have been obtained by any lens prior thereto. They testified that the Zoomar lens was "an entirely new thing"; "*it was so different that every one wanted to get one right away*"; that it was "*very new in the industry, very revolutionary*, something we have never had before"; and also how the Zoomar was useful in cinephotomicography to accomplish a picture that it was impossible to take prior to its appearance.[16] *Not one word of all this testimony was contradicted.*

Commercial success was overwhelmingly established, not only by the petitioner's witnesses, but also by the writings of the experts in the field. It may be, as the Court of Appeals indicated, that the petitioner's employees, in their oral testimony, did not clearly differentiate between the commercial success of the original Zoomar and that of the later improved patent. However, the Court of Appeals overlooked the statements contained in the textbooks that had been received in evidence. The improved lens was introduced in 1955. Each one of these texts was written prior thereto. In 1953 Bretz wrote that "Roughly half of all television studios have purchased these lenses". In 1950, Battison wrote of "the famous Zoomar lens". In 1951, Kingslake wrote that "even today, the best-known Zoom lens, the Zoomar • • • ".[17]

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[15] 124.

[16] 248-255; 389-390.

[17] Exs. 22, 20, 19.

Hutt, cameraman for Paramount Newsreel, testified that when this lens was first used by him at the World Series Game in 1947, "it was so different everyone wanted to get one right away".[18] *Since this substantial commercial success was shown before the appearance of the petitioner's improved lens, we submit it should have been taken into consideration in the interpretation and application of §103.*

Richter and Michel.—None of the above testimony having been contradicted, the courts below relied on two patents as anticipation—Richter (2,078,586) and Michel (2,029,532).[19] Richter was issued in 1937 based on a 1934 German patent and Michel was issued in 1940 based on a 1939 German patent. Both were employed by Carl Zeiss, which was one of the foremost manufacturers of lens objectives in the world, and both patents were assigned to Zeiss. Richter was considered by both sides to have been one of the best lens designers in Germany, if not the world.[20]

The Richter patent is entitled "A Device for Illuminating Microscope Objects". Its purpose is to enable the desired amount of light to be brought to the objective of the microscope and it gave "various magnifications in the transmittal light".[21] It changed the angle at which the light entered the microscope objective from a narrow cone to a wide cone of light. Exhibit "S" is a device made under this patent. The method of accomplishing the foregoing result was by the use of a 3-lens system, corresponding to lenses 2, 3 and 4 of Zoomar. In the

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[18] 250.

[19] Ex. D, 490.

[20] 287, 428.

[21] 518, 418.

Richter system, the 1st and 3rd lenses were moveable in relation to the stationary middle lens. There were no lenses corresponding to lens 1 and 5 of Zoomar. In his patent, Richter indicated that he considered the application of his invention to other fields, such as a telescope, and the Respondent's expert was asked, on cross-examination, whether Richter was stating that his patent could not be used as a telescope. Dr. Rosen testified:

> "A. I guess it does. Richter *did not believe that he could make it.*
>
> Q. He felt that this instrument was not even good enough for a telescope, is that correct? A. Possibly.
>
> Q. And a telescope requires far less accommodation than a zoom lens for a motion picture camera, doesn't it? A. Yes.
>
> Q. And the reason is that the eye compensates for what a film can't compensate for, isn't that correct? A. That is correct.
>
> Q. And, therefore, *if it is not good for a telescope, by no stretch of the imagination could it be good for a zoom lens; isn't that correct?* A. *I will follow your reasoning*" (406-7).

The court below did not decide whether Richter alone would constitute anticipation. It held that Michel is closer to plaintiff's invention. Michel is a patent for a microscope, the purposes of which is to take pictures of the object. Mich stated in this patent that with the use of the same 3-lens system as shown in Richter *still* photographs at varying magnifications can be made without refocusing the instrument. In this context the court below held that the microscope objective corresponded with lens 1 and apparently felt that a mirror took the place of a relay (as Michel does not show in his patent

any lens that could remotely correspond to the lens 5) the mirror projecting the image onto the film plane. Respondent's expert testified that by inserting a motion picture camera instead of a still camera, the zoom arrangement would be the same, but changes would have to be made in the instrument to make it adaptable for motion pictures. As late as the trial he was not able to state what changes would be needed.[22]

The expert on cinephotomicography testified that it would be impossible to take zoom motion pictures with the use of the Michel device—

> "A. Because changes in the system here would bring about changes in the light intensity and it would bring us right back again to the point where we would have to stop the photography, remeasure the light and then continue on again" (393).

and that this device could not be used as a zoom device.

No device was ever produced under the Michel patent. Before, during the time and even after Richter and Michel were patented, Zeiss produced a mechanically compensated

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[22] Q. Well, you mean to say that putting a motion picture camera in place of the still camera, the way it is shown it could not be used as a zoom device? A. Other things would have to be done, but the zooming arrangement would have to done as it shown here.

Q. What other things would have to be done? A. I can't answer that question completely. I think I would have to have some sort of automatic light control associated with it. * * *

Q. Well, all of the instruments shown in the zoom devices, both the lenses of plaintiff and defendant, have an aperture stop connected with the relay, do they not? A. Yes.

Q. That would not be present in this device, would it, the Michel? A. It is not present here.

Q. Would that be sufficient to put an aperture stop in? A. I would prefer to control the light by governing the lamp and not by the use of an iris diaphragm. Don't force me to make an instrument that I wouldn't like" (346-7).

lens, the Vario-Glaukar, which was not successful. Zeiss never produced an optically compensated varifocal lens. Michel never referred to his patent in any of his writings In 1948, Michel wrote a book about the theory of microscopes and there is not a slightest mention of his patent. In 1955, Michel edited a book discussing photographic objectives. He discusses Zoomar and the accused lens as illustrations of optically compensated zoom lenses and does not even mention his device.[23]

Respondent offered no evidence of any expert in the field to the effect that with Richter and Michel it would be obvious to an ordinary skilled lens designer how to make a zoom lens such as Zoomar.[24] It was certainly not obvious to Richter or Michel or Carl Zeiss. It was certainly not obvious to Kingslake of Eastman Kodak, Hopkins of the Imperial University, or Kaprelian, an inventor. Even as late as the trial, it was not obvious to respondent's expert what changes would have to be made to make a zoom lens out of Michel. *It was only obvious to the Court of Appeals and the District Court.* In short, the courts have substituted their judgment of what was "obvious at the time the invention was made to a person having ordinary skill in the art" over that of the most skilled lens designers of that time and after that time.

The problems in this case are: What standards or criteria are required for invention under §103 of the Patent Art to validate a patent? What determines what is "obvious"? Does not §282 read together with §103 show a definite intention of Congress to establish a strong presumption of validity? Has not the Court of Appeals ignored

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[23] 419, 199, 348.

[24] Actually respondent's expert testified to the contrary: that even after Richter and Michel, with 686 one skilled in the art could not construct a zoom lens (329).

the spirit, letter and intent of the 1952 Act and reverted to the extreme strict standard of invention promulgated by this Court, which the Act intended to modify?

Reasons for Granting the Writ

1. The Court of Appeals has decided an important Federal question which has not been, but should be, settled by this Court.

Although the Court of Appeals stated in its opinion that it has not definitely ruled on the interpretation of §103 in this Circuit, "nor need we do so in this case", it actually did so by applying an extremely strict criteria of what constituted invention by finding that the petitioner's invention was "obvious at the time the invention was made to a person having ordinary skill in the art", although, as we have shown, it was clearly not obvious to the inventors of the so-called anticipatory patents and the most skilled lens designers in the world. Actually, in a previous decision of the Court of Appeals, *Lyon* v. *Bausch & Lomb Optical Co.*, 224 F. 2d 530, cert. den., 350 U. S. 911, it adopted a modified standard of invention under §103, and this was the opinion of many commentators[25] interpreting *Lyon* v. *Bausch & Lomb*, as well as Courts of Appeal in other circuits. Apparently, the Second Circuit is getting ready to overrule its decision in the *Lyon* case, having expressed doubt of the correctness of the ruling in *Vermont Structural Slate Co.* v. *Patco Brothers Slate Co.*, 233 F. 2d 9,

[25] The intense interest in the *Lyon* case is evidenced by the numerous articles discussing it. We only refer to law review articles most of which agree that §103 modifies the standard of invention, although a minority is contra. See 55 Columbia L. R. 1231 (1955); 41 Iowa L. R. 699 (1956); 24 Fordham L. R. 700 (1955-6); 17 Univ. of Pitts. L. R. 733 (1956); 1956 Wisc. L. R. 513; 30 So. Calif. L. R. 74 (1956); 55 Mich. L. R. 985 (1957); 24 Geo. Wash. L. R. 366 (1956); 2 Wayne L. R. 130 (1956); 44 Georgetown L. J. 100 (1955).

11, n. 3; and in the instant case stating that they have not ruled on the question in this circuit. Certainly, in the *Lyon* case, Judge Hand indicated that Congress intended that the courts revert back to a standard of invention which was in existence up to 20 to 30 years prior to the decision and which during those years has been abandoned for a much stricter standard.

In any event, no decision has been rendered by this court deciding the effect of the Patent Act of 1952 and, in particular, the effect of §103 and §282; which question is so vital to the economy of this country and to the future administration of the Patent Law.

The status of the law today as to what standard of criteria exists in determining what is and what is not invention, and therefore what patent is or is not valid, is in a state of confusion. If, as Judge Hand indicated in the *Lyon* case, it was the intent of Congress to restore the law as set forth in the older decisions of this Court, then certainly the validity of the patent at bar should be determined by such cases as the *Barbed Wire* cases (143 U. S. 275) allowing a patent to the man who has taken the *last step*, turning failure into success; or *Eibel Process Co.* v. *Minnesota and O. Paper Co.* (261 U. S. 45) where this Court held that where a problem has been recognized as a problem within the industry for a long time and men of ordinary skill in the art have failed to meet it, the conclusion is justified that it is beyond their capacity, and "such a circumstance has not infrequently been held sufficient to carry a discovery across the inventive line"; or the *Diamond Rubber Co.* v. *Consolidated Rubber Tire Co.* case (220 U. S. 428) where the patent held valid "attained an end not obtained by anything in the prior art" and was accepted as the termination of the attempt; or *Minerals Separation* v. *Hyde* (242 U. S. 261) where the court ruled

a patent valid because the new device was immediately adopted in the industry and widely used commercially.

Definite criteria of inventions have been laid down by this Court and the Courts of Appeal in earlier cases, such as *Kurtz* v. *Belle Hat Lining Co.* (C. C. A. 2) 280 Fed. 277. If the patent at bar were to be judged under the criteria set forth in the older cases, there is no question that it would meet every criteria set up by this Court and the Courts of Appeal in a very long line of decisions, prior to the recent trend to a stricter criteria. The evidence is clear and uncontradicted that:

> (a) there was no commercially accepted mechanically compensated varifocal lens prior to Zoomar and no optically compensated varifocal lens whatsoever; (b) that there was a long-felt want for this device; (c) that Zoomar proved to be useful, efficient and simple to operate; (d) that there was long experimentation in the field (for at least 19 years); (e) that it was immediately adopted by the industry and accepted as valid and by the experts as unique; (f) that the inventor was successful after the failure of many others, some of whom were the best experts in the art; and (g) that Zoomar was commercially highly successful.

In discussing his opinion in the *Lyon* case and the question of what criteria should be adopted in determining the validity of a patent, before the Subcommittee on Patents, Trade-marks and Copyrights of the Senate Committee on the Judiciary, Judge Hand testified:

> "* * * after all, we were there to take our orders, as we understood them and we understood that we were to be very strict, very severe",

and expressed the hope that the Supreme Court would decide the issue.[26] See also his statement to the same effect in *Picard* v. *United Aircraft Corp.*, 128 F. 2d 632, 636.

Congress became dissatisfied with the more recent views of this Court and the subordinate courts, and although the Senate report states that the new act codified the law, it is obvious from an examination of both House and Senate reports and the history of the statute that the new act was more than a mere codification. (See House Rep. 1923, 82d Cong. 2d Sess. P. 5 and Sen. Rep. 1979, 82d Cong. 2d Sess. P. 4, in which both houses said: "The major changes or innovations in the title consist of incorporating a requirement for invention in §103 * * * This section should have a stabilizing effect and *minimize great departures which have appeared in some cases.*")

Senator McCarran, in introducing the bill, said in a written statement (Cong. Rec. 98: 9323 (1952):[27]

> "In view of decisions of the Supreme Court and others as well as trial by practice and error, there have been some changes in the law of patents as it now exists and some new terminology used."

The introduction to the Bill states that its purpose is to "*revise* and codify" the laws relating to patents.

The present confusion has been recognized by Congress, the courts and many commentators. The Subcommittee on Patents, Trademarks and Copyrights of the Judiciary Committee of the Senate has made a series of studies of the United States patent system, pursuant to Senate Res.

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[26] Hearings before the Subcommittee on Patents, Trademarks and Copyrights, etc. 84th Cong. 1st Sess. (Oct. 1955), pp. 119-120.

[27] See also colloquy between H. Fellner and Rep. Bryson, the Chairman in Hearings on H. R. 3760 House Committee on Judiciary Subcommittee 3. 82nd Cong. 1st Sess. June 13-15, 1951.

55 of the 85th Congress. Study No. 7 (1958) of this series is entitled "Efforts to Establish a Statutory Standard of Invention", and in the foreword by Senator O'Mahoney, after mentioning the problem, he states that "Since 1952, the issue has been returned to the courts which are now in the throes of deciding what meaning shall attach to the 1952 enactment". That study, as well as many others by this Sub-committee, indicates the present confusion and to some extent, the inadequacy of the term "obvious", it is an attempt to work out some method of bringing order out of chaos. Study No. 7 sets forth a series of decisions of the Federal District and Circuit Courts, indicating a lack of uniformity of the application of §103. However, we will discuss this in more detail in Point 2 below. The confusion has been recognized by articles published throughout the country, some of which are recited in the footnote below.[28] Most of the authors state that §103 has changed

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[28] Some Aspects of the Underlying Legislative Intent of the Patent Act of 1952, 23 Geo. Wash. L. R. 658 (1955) in which Prof. Harris writes an excellent article on the background and purpose of the act; also Lutz, The New Patent Statute; Congress Revitalizes the Patent System. 39 Amer. Bar Assn. Jr. 209 (1953) stating that Congress intended the law to be more liberal with inventors and desired a strong patent system; Crouch, The Inventor in the Courts, Confusion as a "Standard" for Invention, 40 Amer. Bar. Assn. Jr. 103 (1954) the layman's point of view though vouched as "sound thinking" in the A.B.A.J.; Patents—The Changing Standard of Patentable Invention: Confusion Compounded, 55 Mich. L. R. 985 (1957) and Degree of "Invention" necessary to Sustain a Patent, 6 So. Carolina L. Q. 201 (1953) both articles stating that the courts have been hostile to patent rights and the 1952 Act was to correct this situation; Zallen: New Patent Law Favors Invention, 24 Boston Bar Jr. 281 (1953); Today's Concept of Invention, Gardner, 3 U. C. L. A. Law Rev. 173 (1956). Flattery id. 3:184, both expressing the hope that the courts would follow "the intent of Congress by swinging from a strict to a liberal view in allowing patents"; 22 Geo. Wash. L. R. 373 (1954) stating that §103 will prevent the extreme applications of prior decisional law; 21 Geo. Wash. L. R. 575 (1953) stating that it was the Congressional intent to strengthen the presumption of validity which had been ignored by the courts.

the standard of invention to a more liberal one, and that this was the intent of Congress as it was obviously dissatisfied with the severe standards being imposed by the courts.

§282 is also read out of the act as interpreted by the Court of Appeals. This section, in strong language, wrote into law a presumption adopted in the older cases that "A patent shall be presumed valid. The burden of establishing invalidity of a patent shall rest on a party asserting it". Congress intended that a patent should not be lightly held invalid as was done below. The exceptions to the application of the presumption found in the more recent cases, and as applied below, was omitted by Congress in drafting §282. The history of §282 is evidence that Congress intended to omit such qualifications to the presumption, its dissatisfaction with these qualifications, and its intent to give a greater degree of finality to the award of a patent by the Patent Office. At the hearings before Subcommittee No. 3 of the House Committee on the Judiciary on HR 3760, 82nd Cong., 1st Sess., 1951, page 46, the Committee said:

> "In view of the growing tendency in the recent past for courts to ignore or pay little more than lip service to the doctrine of the presumption of validity, it is hoped that this positive declaration by Congress will be of real value in strengthening the patent system."

Later in the hearings the Department of Justice objected to the inclusion of §282 with the following language:

> "The Department objects to these provisions since at present the presumption of validity is not embodied in a statute and is merely a qualified rule of evidence. Also under present law this pre-

sumption does not always hold true, for example, in cases where the Patent Office fails to cite or consider pertinent references or prior art."[29]

This is almost exactly the language used by the Court of Appeals below in refusing to apply the presumption (App. B, p. 34b). Nevertheless, Congress passed the statute with the presumption in §282 without the qualification, the committee declaring that the intent of the section was to codify "the existing presumption of validity".[30]

We submit that it is the intention of Congress which should control[31] rather than the economic views of the courts. The hearings clearly show that Congress was concerned with the plight of the small individual inventor who could not afford the expense of litigation necessary to sustain his patent. Studies made by Congress prior to the Act, and even the more recent ones, prove that this small individual inventor was most affected by the severe standards imposed by the courts.[32]

It is not our intention here to brief this point at length, as we understand the purpose of this petition is to present before this Court the importance of the problem to be decided. The intent of Congress as shown by the 1952 Act, was to modify the strict standard theretofore adopted

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[29] P. 97. See also p. 220 of Hearings, letter from Judge Clarence G. Galston to the committee showing how the "courts have lightly treated the so-called presumption of validity."

[30] H. R. Rep. No. 1923, 82nd Cong. 2nd Sess. 29 (1952).

[31] U. S. Const. Art. 1. Sec. 8.

[32] Report of Sen. Subcommittee No. 1464 (1956) 84th Cong. 2nd Sess. p. 4.: "The large number of patents held invalid has an especially devastating effect upon the independent inventor of small financial means. * * * Investment in inventions, in consequence, is discouraged since the property value thereof is depreciated."

by this Court and to establish a criteria more in line with its older decisions. The present confusion is evidenced by numerous articles and conflicting decisions (Point 2) and the studies now being made by the Subcommittee on Patents, Trade-marks and Copyrights of the Senate Judiciary Committee prove the present importance of this problem and the urgent necessity for this Court to decide it now.

2. The decision of the Court of Appeals is in conflict with the decision of other Courts of Appeal on the same matter.

From a study of decisions of the 3rd, 4th and District of Columbia Circuits, it seems obvious that were this case to arise in those Circuits, the patent would have been held valid. Patents of far less importance and novelty were held valid in these Circuits and their interpretation of §103 is different than that of the Court of Appeals below. As illustrations of the cases in the other Circuits, which differ from the one at bar are the following:

3rd Circuit:

R. M. Palmer Co. v. *Ludens, Inc.*, 236 F. (2d) 496 (1956);
Newburgh Moire Co. v. *Superior Moire Co.*, 237 F. (2d) 283 (1956);
Plax Corp. v. *Precision Extruders*, 239 F. (2d) 792 (1957).

4th Circuit:

Brown v. *Brock*, 240 F. (2d) 723 (1957);
S. H. Kress & Co. v. *Aghnides*, 246 F. (2d) 718 (1957);
Otto v. *Koppers Co.*, 246 F. (2d) 789 (1957).

Dist. Col. Cir.:

L-O-F Glass Fiber Co. v. *Watson*, 228 F. (2d) 40 (1955).

The Third Circuit (as we show below), was originally one of the circuits which insisted upon a rigid standard of invention similar to the Second Circuit, and in its earlier decision of *Stanley Works* v. *Rockwell Mfg. Co.* (1953), 203 F. (2d) 846, cert. den. 346 U. S. 818, it held that the §103 did not effect any change in the standard of invention. However, commencing with the *R. M. Palmer* case, the Third Circuit completely changed its point of view and now has become one of the more liberal circuits and has lowered the standard of criteria required for a valid invention. In the *R. M. Palmer Co.* case, the court held that a design patent for chocolate novelties in the form of animals was valid and infringed. Its opinion clearly indicated its belief that it was the intention of the 1952 Act to change the rigid standard for determining validity of patents to a more liberal one in accordance with the earlier line of decisions of the courts. It accepted the observations of Judge Learned Hand in the *Lyon* v. *Bausch & Lomb Optical Co.* case. Shortly thereafter, in the *Newburgh Moire Co.* case, the court upheld a patent for a selective wetting process of cloth to produce a moiré pattern against earlier patents in which the District Court had found anticipation in very similar processes. In the *Plax Corp.* matter, the court held valid a process to produce hollow articles from organic plastic materials, although substantially similar processes were previously used for the working of celluloid and glass. In both cases, the court reaffirmed its decision in the *R. M. Palmer* case.

The Fourth Circuit, in the *Brown* case, held valid a patent for a weeping doll which produced tear drops over

similar prior devices which caused weeping. These prior devices were not as good as they produced a stream of water. The court relied upon §103 and referred to the older criteria (that because of a long-felt and unsatisfied want and the number of attempts that had been previously made, and that if any solution had been obvious it would not have been overlooked by the industry, as well a commercial success), to hold this patent valid. In the *S. H. Kress Co.* case, the court held valid a patent relating to devices for aerating water in a household faucet over an earlier English patent, the drawing of which had "superficial resemblance to the patent in suit". The English patent had never been used. However, because of a substantial commercial success and the prior failure of researchers in the industry, the patent was held valid. In the *Otto* case, the court held valid a patent for a method of removing ammonia from coke oven gas by the use of a spray under pressure. It held that this process was not anticipated by prior patents where sprays were used, these prior patents claiming that the pressure was to be avoided. Here again the court relied upon the fact that engineers in the field, working on this problem, had not been successful as well as the commercial success of the patent. It relied to some extent for its criteria on *Kurtz* v. *Belle Hat Lining Co.* (2d) Cir. 280 F. 277, which apparently is no longer law in the Second Circuit.

In the *L. O. F. Glass Fiber* case, the District of Columbia Circuit held valid a patent for making fibrous glass over prior patents which separately had all the elements of the patent in suit. The Court said:

> "*It may be safely said* that if those skilled in the mechanical arts are working in a given field, and have failed, after repeated effort to discover a certain new and useful improvement, *that he who*

first makes the discovery has done more than make the obvious improvement which would suggest itself to a mechanic skilled in the art, and is entitled to production as an inventor. • • •

"We may safely assume that the Patent Act of 1952, 35 U. S. C. A. §103, was intended to restore the law to what it was when the Court announced the definition of invention."

Making a statement of what is "obvious" or "not obvious", although on the surface appears to be a statement of fact, is in essence a decision of law mixed with fact. In such situations this Court has not applied the "two-court rule". *Great Atlantic and Pacific Tea Co.* v. *Supermarket*, 340 U. S. 147, 153.

It is extremely difficult, if not impossible, to point out exact language of decisions in each circuit disagreeing with the decisions in another circuit. It is obvious, from a study of the opinions mentioned above, that the courts differ greatly in their application of criteria in determining the validity of patents. In any of the three circuits above mentioned, applying the rules of the cases cited, the patent herein would have been held valid. Should the validity of a patent depend upon the choice of a forum? This would cause excessive shopping around for a favorable forum and destroy the uniformity of law so necessary in our country with its federal system.

The hearings and study that are going on now before Congress clearly indicate the dissatisfaction of Congress with this status. For a study made for the Senate Subcommittee for the period from 1948 to 1954, a review of percentage of patents held valid and infringed in the various circuits, show the following: 4th Cir., 37%; 5th Cir., 36.7%; 9th Cir., 24.5%; 10th Cir., 21.9%; 7th Cir.,

19.0%; 6th Cir., 15.4%; 1st Cir., 11.5%; 8th Cir., 8.4%; 3d Cir., 7.5%; 2d Cir., 2.6%.[33] (Since this study has been made, the Third Circuit has changed considerably in its attitudes to patents.)

The fact that the Second Circuit held valid only 2.6% of the patents brought before it substantiates the testimony of Judge Learned Hand quoted in Point 1 above. This attitude penalizes a small independent inventor or his company (such as the petitioner) who happens to reside in the Second Circuit and cannot afford to seek a more favorable forum and pay the added expenses to litigate the validity of his patent far away from home.

We submit that the Court should accept this case and decide what criteria for inventions should be established and followed; so that the same criteria should be followed in each circuit to the end that a patent would uniformly be ruled upon no matter in what court the suit is brought.

CONCLUSION

For which reasons this petition for a writ of certiorari should be granted.

Respectfully submitted,

LOUIS H. SHEREFF,
Attorney for Petitioner.

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[33] See Senate hearings before Subcommittee on Patents, Trade-marks and Copyrights of Committee on Judiciary, 84th Cong. 1st Sess. (Oct. 10-12, 1955), p. 178. At the same hearings (pp. 175, 176) the concern of the committee is clearly shown with the tendency of the courts in recent times holding a larger percent of patents invalid than ever before. See also the earlier study made by Subcommittee on Patents Trade-marks and Copyrights of the House Committee on the Judiciary on HR 5988, 80th Cong. 2nd Sess. Ser. 21, P 97 (1948).

Appendix A

U. S. Patent Act of 1952.

§100. Definitions.

When used in this title, unless the context otherwise indicates:

(b) The term "process" means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.

§102. Conditions for patentability; novelty and loss of right to patent.

A person shall be entitled to a patent unless—

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent.

§103. Conditions for patentability; non-obvious subject matter.

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

§282. Presumption of validity; defenses.

A patent shall be presumed valid. The burden of establishing invalidity of a patent shall rest on a party asserting it.

Appendix B

OPINION OF DISTRICT COURT

OPINION BY IRVING R. KAUFMAN, D. J.

This is an action for alleged infringement of two patents relating to variable focal lens systems for motion picture and television cameras. These patents are No. 2,454,686 (hereinafter called 686), issued November 23, 1958, and No. 2,718,817 (hereinafter called 817), issued September 27, 1955.

Plaintiff, a New York corporation manufacturing and selling varifocal lenses, alleges that defendant, by selling certain lens systems called Pan-Cinor 70 and Pan-Cinor 100, is infringing the above patents owned by plaintiff. The alleged infringing lens systems are manufactured in France by Societe d'Optique et de Mecanique de Haute Precision and are sold in this country by the defendant, a New York corporation. A United States Patent, No. 2,778,272 covering the alleged infringing devices was issued on January 22, 1957.

The defendant's answer, inter alia, denied infringement and alleged the invalidity of both patents. In addition, the answer contained two counterclaims; one, for a declaratory judgment that the patents in suit are invalid and not infringed, and two, for damages based upon a claim of unfair competition.

A varifocal lens is an optical device composed of lenses which are movable in relation to each other and are operable to vary the size of the image of an object without substantial displacement or defocusing of the image from a predetermined focal plane. In the fields of motion pic-

Specifically, defendant relies upon two U. S. patents: No. 2,078,586 issued to R. Richter on April 27, 1937 for a Device for Illuminating Microscopic Objects; and No. 2,209,532 issued to K. Michel on July 30, 1940 for a Miscroscope.

In the Richter patent, the inventor did not intend to make a motion lens for use in taking motion pictures but rather to create a device which would provide for continuous variation in the size of the image of a source of light, to permit a continuous changing of the numerical aperture of the microscope. He was faced with the same difficulty encountered in the other variable focal instruments in that as the image would be magnified it would tend to leave the desired focal plane. To correct this problem, he employed optical, rather than mechanical compensation.

The patent indicates that Richter considered whether optical compensation would prove useful for other purposes such as the construction of varifocal telescopes. Recognizing that optical compensation would not be exact throughout the zoom range and believing that such "exact images are desired" in telescopes, he rejected the possibility.

The idea of utilizing optical compensation in other varifocal devices, however, was not rejected by Richter's co-worker, Michel. In the Michel patent for a microscope which would permit near simultaneous photography and subjective examination of the microscopic image, the inventor disclosed that "A special improvement can be arrived at * * * by using as a projection system a panoratic" [i.e. varifocal] "optical system which permits a continuous change in the magnification of the image in the image plane of the imaging receiving device without any change in the acuity of the image."

Prior to this patent it was believed that in order to get an enlarged microphotograph, it would be necessary to move the camera back. (Tr. p. 196). Michel's patent envisioned a device for the taking of still photographs at the various magnifications of the image, without moving the camera. It too, however, did not envision the taking of motion pictures.

This then is the first issue, whether the utilization of an optically compensated varifocal lens system for motion pictures represented an inventive advance over the Richter and Michel patents. The discovery of a new use for a known process "may be patented provided the conditions for patentability are satisfied." See Reviser's Note to 35 U. S. C. §101. The Patent Act of 1952 sets forth the guiding standard in §103.

> "A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made." [1]

[1] Until 1952 there was no statutory test of patentability, other than the old requirement that the subject matter be "new and useful." 1 Stat. 318 (1793). Since 1850, however, the courts have held that the subject matter must exhibit "invention" as well. *Hotchkiss* v. *Greenwood*, 52 U. S. (11 How.) (1850). The definitions of and embellishments on the term "invention" have been plentiful and diverse. The Reviser's Note to section 103 of the Patent Act indicates that Congress adopted a statutory standard in order to bring some measure of stability to this rather confused era. The Note further indicates that the standard enunciated and was not intended as a final statement, but was to serve as a basis for the addition of criteria to be worked

To determine this question, therefore, we must initially inquire who is the "person having ordinary skill in the art to which said subject matter pertains." Plaintiff maintained throughout the trial that the test in this field should not be the ordinary optical worker, but rather, the ordinary skilled lens designer. This position is, of course, correct. See *American Stainless Steel* v. *Ludlum Co.*, 290 Fed. 103 (C.C.A. 2, 1923).

The issue is, therefore, whether a skilled lens designer with knowledge of the disclosures of both the Richter and Michel patents would have perceived the utility of adopting those disclosures to the field of motion picture cameras before the inventor, Dr. Back, filed the application for his patent and whether that hypothetical lens designer would have been able to make the necessary adjustments rendering such an adaptation practical.

There is little doubt that ordinary skilled lens designers with knowledge of both of these patents could have recognized the possible application of their teachings to a varifocal lens system for motion picture purposes. Plaintiff's own expert witness, Kaprelian, a lens designer, testified that he studied the Richter patent with this end in view a number of years before the inventor of 686 filed his application for a patent on that device. (Tr. p. 562). At the time, however, he was not aware of the Michel patent and his efforts, the extent of which were not indicated, did not meet with success. (Tr. pp. 277-278).

The question resolves itself into whether or not after having perceived the possible application of these two patents, a lens designer would have been able to take

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out at a later time. Until such criteria are set forth by Congress, however, the position taken by this Circuit in *Lyon* v. *Bausch & Lomb Optical Co.*, 224 F. 2d 530, (C. A. 2, 1955) would appear to be the proper approach.

their teachings and construct a varifocal lens for motion picture cameras. If the ordinary skilled lens designer would have been able to do so, then patent 686 would not be valid even though Michael and Richter had not created such a device,[2] and even though they did not realize that their teachings could be used for this purpose.[3]

In order to determine this question it is necessary to compare the disclosures of the two prior art patents with patent 686.

First, as to the basic functions of the various lenses. The lenses primarily responsible for the zooming effect are three in number. The first of those three serves primarily to magnify or demagnify the image and incidentally to change the location of the plane of the image. In plaintiff's patents 686 and 817, this lens is termed the variator and that term will be used here. The second lens inverts the image presented to it. This lens is termed the erector. The third lens of the zooming group is the so-called compensator which serves to stop the movement of the image and holds it in a focal plane that is substantially in one position.

These three lenses are present in the Richter and Michel patents as well as in plaintiff's two patents and in the other varifocal lenses in the suit. In every one of these devices they serve the same basic function. What is more, their physical setting and operation is almost identical. In the prior art patents, in 686 and in the subsequent devices, the zooming lenses are contained within a single tube structure composed of various inner

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[2] *DeForest Radio Co.* v. *General Electric*, 283 U. S. 664 (1931) ("The question is not whether the prior art had made a practicable * * * [device], but whether it showed how one could be made * * *.")

[3] See *General Electric Co.* v. *Jewell Incandescent Lamp Co.*, 326 U. S. 242 (1945).

barrels holding the different lens elements. The erector lens is always in a fixed stationary position. The variator and compensator lenses are always fixed in position relative to each other and both are movable as a unit with reference to the stationary erector lens.

In addition to these lenses, there are two others which, while they may not participate in the zoom operation directly, are generally necessary to the practical operation of the device. These are a front lens which is focused on a particular subject producing an image which it positions for action by the other lenses and a relay lens which takes the image formed by the compensator lens and directs it to the desired plane. These lenses are fixed in a stationary position relative to the stationary erector lens. In Richter and Michel, there are lenses which perform these functions. In addition, the particular mechanism for moving the variator and compensator lenses relative to the stationary lenses is concededly equivalent in all three devices as is the particular way in which the various lenses are held in place.

The invention, if any, in patent 686 must be sought elsewhere than in the specific construction of the lens holding members, or the mechanism by which the movable lens assemblies are moved relative to the fixed lens assemblies. Patent 686 emphasized that "The requirement is simply that the variator and the compensator move as an integral unit relative to the front lens, erector and relay lens assemblies which themselves are fixed as a single unit." (Column 5, lines 51-55). This too, however, was not a novel disclosure, since it was basic to the varifocal structure in the prior optically compensated devices.[4]

[4] The Richter patent stated "The additional optical system is conveniently a system consisting of two displaceable members which have a constant distance apart and of a stationary member disposed between

Plaintiff contends basically that the degree of compensation in Richter is not sufficient for purposes of cinematography and that developing a method by which greater compensation may be obtained constituted invention. More specifically, the plaintiff demonstrated that using the calculations for the various lenses given by Mr. Richter, the image would be in exact focus only twice during the zoom range and the disparity during the remainder of the operation would be too great for motion picture purposes. The real question is whether a competent lens designer could have solved this compensation problem. At this point, the expert witnesses were in complete disagreement. Plaintiff's expert testified that "* * * if you took the disclosures and the ideas [in Richter and Michel] and created a zoom lens around that—that is, use the disclosures with the knowledge of a good lens designer—as far as I know you will still end up with having only two compensation points with this large deviation in between." (Tr. p. 563).

The defendant's expert testified, on the other hand, that it was within the general knowledge of the art at the time to be able to construct a device from the disclosures in Richter which would have four exact compensation points and a relatively slight deviation during the remainder of the zoom operation. He arrived at this conclusion by the following reasoning: the diagrams and lens

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these two displaceable members. When the two displaceable members of the tional optical system are convergent and when the said stationary member is divergent, the focal lengths may be so chosen that the light source image produced permanently lies in one and the same plane, irrespective of the relative positions of the members of this optical system, which means that this system is approximately pancratic." Column 2, lines 20-32. Pancratic means variable focal. The Richter patent goes on in some detail discussing the operation of the varifocal system, with extensive diagrams, charts and specific lens data.

data in Richter relating to the 3 lens zooming group indicated that he intended to construct a symmetrical system—i.e. the compensator and variator lenses were both positive and of equal power, etc. A symmetrical system may be represented graphically by a "W" shaped curve. To construct such a curve, Dr. Rosin took a ray parallel to the axis in the middle lens, traced the ray to one side and chose that as the starting point. There was a slight discrepancy between this point and the figures indicated by Richter, but Dr. Rosin assumed that Richter made a slight miscalculation in working out the arithmetic. From that point he charted a graph which did resemble a "W" shaped curve. By a slight variation of the focal plane on this graph, he demonstrated that the image would be in exact focus four times during a zoom operation and would be well within points of acceptable optical tolerance during the remainder of the operation. (Defendant's Exhibits J and U). As to the movement of the focal plane to the desired position, he testified that this was well within the knowledge of the art "since the beginning of photography." (Tr. p. 474).

Plaintiff's expert conceded that Richter showed at least a "nominally symmetrical system", but he contended that when the figures presented by Richter are traced out they do not show an exact symmetrical system. (Tr. p. 582). He relied on Richter's calculations rather than on the other indicia in his patent indicating a symmetrical system. He agreed, however, that if Richter intended to create a symmetrical system, the method by which Dr. Rosin calculated his graph would have been a correct one. (Tr. p. 583). With regard to the movement of the focal plane in Exhibits J and U, Kaprelian did not directly dispute that this could be done. His testimony with regard to shifting compensation planes was directed at Plaintiff's Exhibit 27 which was a graph charting image dis-

placement in the Richter 3 lens zoom group according to the figures given by Richter. Kaprelian testified that he could presently transform that graph into the graph charted by Dr. Rosin, but he testified that he would not have been able to do so before the issuance of patent 686. His reasons were twofold: one, that before the issuance of 686 and the publication of an article by Dr. Back in 1952, (Plaintiff's Exhibit 31), no one knew how to make such transformations and secondly, apparently there was sufficient knowledge in the art at that time to *make the* transformation, but there was insufficient disclosure in Richter of the functions of the various lenses to enable one to make this transformation. (Tr. pp. 571-572).[5] Kaprelian did not testify that the transformation made in Exhibits J and U would have been beyond the knowledge of the art at the time. And indeed, the inventor of 686, Dr. Back, admitted that it was customary in the art to make adjustments in order to obtain the best focal sharpness. (Tr. pp. 593-594).

The question is not really what Richter's intent was with regard to a symmetrical or asymmetrical system, but whether the competent lens designer would have taken the disclosures in Richter's patent and would have checked his figures by drawing a graph based upon a symmetrical system as indicated in the diagrams and in Richter's making the variator and compensator lenses of equal power or whether, if he relied upon Richter's calculations, he would have been able to make the necessary transformations from that graph.

If one or the other possibility would have been obvious to the skilled lens designer concerned with solving the

[5] There was sufficient lens data in the Richter patent, however, to enable a lens designer to reconstruct a model of that device to see just how each lens operated.

problem, then there is no invention in 686. While I am mindful of the dangers of hindsight, I am led to the inescapable conclusion that it would have been.

Of course, after a designer had solved this problem of compensation range, he would still be faced with what one expert in the field described, as the "well-nigh insuperable" (Plaintiff's Exhibit 19, p. 136) difficulties involved in actually designing the lens system in such a manner as to correct all the problems of chromatic and spherical aberration, astigmatism, adequate light transmission, etc. He would have to determine the proper thickness of the lenses and their spacing, etc. Solving these problems may well take many years of careful experimentation.

The plaintiff, however, may not be heard to contend that the solution of these difficulties requires invention for patent 686 gives no indication as to how they were solved in the 686 device.

This brings us to defendant's alternative ground for its claim that patent 686 is invalid—insufficient disclosure.

The 1952 Patent Act like its predecessors requires that "The specification shall contain a written description of the invention, *and of the manner and process of making* and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention." 35 U. S. C. §112. (Emphasis added).

Patent 686, as stated above, makes no reference to the method by which the inventor was able to correct the aberrations which appear in any lens device but which are particularly acute in a device which contains lens

elements which are movable in relation to each other. The patent not only does not indicate how these matters were to be corrected but it does not contain the most elementary data with regard to the optical construction of the 686 device which would enable a skilled designer to reconstruct that device without excessive difficulty and experimentation.

The inventor's position is that the methods for correcting such optical problems were well known to the art and beyond the scope of his invention. The publications introduced by the plaintiff to demonstrate that the device was well received by experts in the optical field, indicate, however, that these experts were particularly impressed with the inventor's ability to master just those difficulties.[6]

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[6] See e.g. Plaintiff's Ex. 19 at p. 136. Kingslake, Chief Optical Designer for Eastman-Kodak and formerly Dean of the Optical University in Rochester, wrote in "Lenses for Photography" in 1951, as follows:

> "* * * the extreme difficulty of both designing and manufacturing a sufficiently well-corrected zoom lens has made them almost non-existent until quite recently. Even today, the best-known zoom lens, the 'Zoomar, for 16 mm. photography embodies 22 separate lens elements, while for 35 mm. cameras it contains even more. It is hard enough to design a fixed lens with adequate definition for most purposes, and the difficulties of designing a system in which one part of the lens may be moved relative to another part to change the focal length, are well-nigh insuperable."

In Plaintiff's Exhibit 18, at p. 22, another expert stated as follows:

> "It is claimed that each lens element has to be corrected for chromatic aberration, spherical aberration and astigmatism, and that coma and distortion are corrected by the 'concerted interplay' of the different lenses. There is no mention in the published account of the lens" [nor in the patent] "*of the manner in which these aberrations remain corrected on varying the image size.* Moreover, all the lenses of components 1, 2, 3 and 4 are of positive power, and consequently must have a large positive Petzval sum. Components 5 and 6 appear to

This would lead one to suspect that one of the principal reasons for the delay in developing a zoom lens for motion picture use was the anticipated designing difficulties rather than the theoretical problem of achieving optical compensation.[7]

Patent 686, however, unlike most patents for optical devices, fails to set forth a table indicating the radii and thickness of the various lenses, their refractive index and spacing.[8] These elements are critical, not only to the gen-

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be conventional triplet lenses, so that the Petzval sum of these two components would certainly not be less than zero. For this reason it would seem impossible to obtain really good definition over the whole field of view."

[7] See Plaintiff's Exhibit 22 at page 64, wherein another expert states:

> "Since each lens element is a separate piece of glass, this means 56 surfaces; and when it is considered that each one reflects and loses up to 10 per cent of the light that falls on it, one wonders how any light reaches the plate at all. By coating the lenses with magnesium fluoride, however, this reflection can be cut down to 1½ per cent at each surface. Only since the development of antireflection coating has such a lens design been made possible."

Still another expert stated in reference to the 35 mm. Zoomar lens, in plaintiff's exhibit 20, at pages 145-146, as follows:

> "This lens, developed by Dr. Frank G. Back, has twenty-eight elements operating inside the barrel. At once the tremendous value of the lens-coating process so recently developed will be apparent. Without this, the loss of light in passing through all these lenses, would be tremendous, and it would not be half as effective. As it is, the *f* value is a maximum of f.5.6 with a minimum of f.22. It is thirty inches long and weighs eleven pounds."

The development of anti-reflection coating, not known at the time of the Richter and Michel patents, may be another factor in accounting for their not having developed a varifocal lens for motion picture use.

[8] Compare, for example, the 817 patent, the Reymond patent, and the Richter patent.

eral designing problem, but to the particular zoom operation of the lens.[9]

When plaintiff's expert witness, Kaprelian, was asked to explain just what patent 686 disclosed, he answered as follows:

"In patent 686, Dr. Back discloses a method for changing the size of the image on the film without having any non-linear motion required. He does it by moving two groups of based lenses with a third lens between them, and other lens groups to the outside. *By properly balancing these powers and choosing his spacings*, he is able to achieve this result." (Tr. p. 215).

As far as the movement of the two groups of based lenses with a third, this was clearly taught in the prior art patents of Richter and Michel. And as far as the proper balancing of powers and spacings, it is simply not disclosed in the 686 patent. Thus, even apart from the total failure to disclose the radii, thickness and coefficients of the various lenses, the feeble attempt to set forth powers and spacings which is made, is woefully inadequate.

To illustrate, the front lens is composed of two lens elements. The patent does not set forth their separate

[9] In a pre-trial deposition read into the record, the inventor, Dr. Back, indicated that the power and position of the various lenses were critical factors. He admitted that the patent did not disclose the distance that the front lens should be spaced from the other stationary lenses. (Tr. pp. 548-549). While the powers of certain lenses or lens groups are given, their thickness is not. The inventor conceded that the thickness of a lens could not be determined from its power but that it would be necessary to have the radii, glass coefficients and other factors to determine thickness. He admitted that the thickness of the lenses was an important factor in producing the zoom effect with regard to every lens except the front lens. (Tr. pp. 550-552).

powers but indicates that together their power is plus 12¾ diopters. The distance that the front lens is spaced from the stationary erector or relay assemblies is not disclosed at all. The variator lens assembly is composed of four separate lenses in groups of two. The sole reference in the patent to the construction of these lenses is that there are that many and they are spaced the way they are "to avoid aberration", (no indication of what type of aberration) and that each group of two is of plus 36¼ diopters and that the groups are spaced 22¾ mm. apart. The erector assembly consists of eight lenses, cemented into four lens groups spaced in groups of two. The sole statement in the patent is that the entire assembly has a power of plus 32¾ diopters "and comprising four aplantic doublets *to correct aberrations.*" The compensator assembly consists of two lens elements cemented together. The patent states merely that together they have power of plus 14 diopters. The relay lens consists of two groups of 3 lenses each. The sole information about these lenses given in the patent is that they are anastigmats and each group has a power of plus 23½ diopters.

With regard to the crucial element of the fixed distance between the variator and compensator lenses, there is no disclosure. Instead, the patent presents a relational formula which is admittedly insoluable mathematically, for determining the characteristics and spacing of the compensator lens. The patent states: "It is impossible to find a value for L, L' and *f where* the above mentioned equation holds true for every position of the barrel *but by judiciously choosing these values*, this condition can be exactly fulfilled for three points while the deviations

of the other points are so small that they fall within accepted optical tolerances." (Column 4, lines 55-61).[10]

Even in setting out the functions of the various lens groups the disclosure was not "full". Thus; throughout the trial the plaintiff stressed repeatedly that the relay lens serves to further diminish deviations from the focal plane which the compensator is unable to catch and that it will change the size of the image presented to it to varying degrees. (Tr. p. 187). There is no indication of this function anywhere in the patent. In the mechanically compensated prior art patents for varifocal motion picture lenses, however, this function for the relay lens is disclosed. See e.g. Capstaff. (Tr. pp. 504-505).

Despite these multiple failings, plaintiff's expert witness testified that although he never tried to construct a varifocal device from the disclosures in patent 686, he believed that a competent lens designer would "very probably" be able to do it. (Tr. p. 561).[11]

Even if a competent lens designer could construct such a device from the disclosure in 686, and I find this difficult to believe, plaintiff's evidence indicates that it would

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[10] Even the plaintiff did not try to make much of this formula as disclosing the invention apparently because the alleged infringing devices were constructed under a different formula providing for four points of exact compensation. The 686 formula may be translated into an S curve, whereas the defendant's formula would resemble a W curve. To cover the defendant's devices, the plaintiffs had to give their claims the broadest possible reading, bringing them inevitably within the prior art of Richter and Michel.

[11] It is interesting to note how that hypothetical figure, the ordinary skilled lens designer, shifts from a rather dull, unimaginative fellow when the question is whether the device is an advance over prior art, to a rather brilliant, industrious and imaginative person when the question is whether there was sufficient disclosure and whether devices seemingly totally different are mere equivalents.

certainly take him no less than six years.[12] And it is extremely doubtful that the 686 patent would serve any more of a function than to encourage the ordinary lens designer during this period with the thought that it could be done.

Plaintiff's position, however, is that by describing the *functions* of the various lenses a competent lens designer would immediately know just what type of lens is required to perform that function and the problems peculiar to the designing of an overall varifocal system and their

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[12] Plaintiff contends that the Pan-Cinor 60 varifocal device, constructed according to the Cuvillier patent (Defendant's Exhibit A) as well as Dr. Back's own patent 817 would both be infringements of patent 686 as mere optical equivalents. The Cuvillier patent introduced a negative erector lens which formed virtual rather than real images and permitted the construction of a much smaller and simpler device. The plaintiff contended that the ordinary lens designer realized that negative lenses may be substituted for positive lenses, and that a negative lens would create a virtual image. (Tr. p. 102). This was Dr. Back's primary change in patent 817. Nevertheless, Dr. Back testified that although he knew that a negative lens could be substituted and would have this desirable effect when he filed for his patent in 686, and although he started work at that time to design a varifocal system with a negative lens, and despite his intimate knowledge of the designing problems to be met in constructing a varifocal lens for motion picture purposes, nevertheless it took him 6 years to go through the necessary mathematical calculations and optical experiments in order to design such a lens. (Tr. p. 177; Plaintiff's Reply Brief p. 10).

With regard to the disclosure problem, it is interesting to note what Dr. Back had to say about 686 in his application and patent for 817.

> "It is the object of the present invention to overcome these disadvantages inherent in the device set forth and described in U. S. Patent 2,454,868 * * *. This arrangement [686] requires a rather complex optical construction for the lens *necessitating* a considerable number of lens elements. In order to keep the overall length of the system in reasonable proportions the lens groups between the images *had to have* considerable power and *had* to be split up into several components. The great number of elements thus required caused a substantial decrease in light

solutions were well within the knowledge of the art although it would take time to work out the various formulas.

While there may be an element of truth in this contention, where does it leave plaintiff's 686 patent in relation to the prior art patents Richter and Michel? If there was room for invention after those patents, and there well might have been, it could not be satisfied by a patent which did little more than state what role the lenses in the Richter system performed and merely announced to the world that the designing problems could be worked out by diligent labor. Surely, it would be a novel theory to grant patent monopolies to one whose "invention" consisted of stating what function is performed by the elements in a prior patent. This true, particularly where the prior Richter patent does give sufficient lens data to enable a lens designer to recon truct the device and see for himself.

Patent 686, while informing the lens designer that "by judiciously choosing" his values he may be able to keep deviations within accepted optical tolerances, does not even inform him what those acceptable tolerances are or what relation they have to the possible range of magnification.

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transmission even when anti-reflection coatings were applied to each of the glassair surfaces. All these lens groups *had* to have positive powers and therefore caused a strong Petzval curve. Field flattening had to be achieved by introducing either negative astigmatism or distortion." Patent 817, column 1, lines 36-60.

Unfortunately, these factors were not mentioned in patent 686. While it is true that some of these factors relate principally to the achievement of a sharper image rather than to the reduction of image displacement, one of the central grounds upon which the plaintiff seeks to distinguish Richter and Michel is that these factors would have to be adjusted in order to convert the disclosures in those patents into a workable varifiocal system for motion picture purposes.

The patent gives no indication of the extent to which the compensator actually does compensate for image shift.[13]

The principal questions facing the art after the Richter and Michel patents were the following: Just how effective would optical compensation be for motion picture purposes? For what range of magnification? And just how could the "well-nigh insurmountable" designing problems be surmounted? The patent answered none of these questions. Certainly, in a field such as optical design, where experimentation involves such lengthy, arduous and costly work, including the construction and testing of innumerable models to see whether they might satisfy the essential requirements, failure to make full disclosure is totally inexcusable.[14]

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[13] Compare discussion by the inventor in Plaintiff's Exhibit 31.

> "The original Zoomar lens was laid out in such a way that the end position of the variator barrel always placed the first intermediate real image into the principal plane of a variator component thus eliminating its influence on the displacement error at the end position. *Power and spacing of the compensator were chosen to achieve minimum displacement.* The compensator therefor was the only element determining the image travel compensation. This way, *the best compensation achievable* was still approximately half a per cent of its maximum focal length and with a range of 3 to 1, one and one half per cent of the minimum focal length" (p. 1198).

Dr. Back conceded that in 686, despite compensation, the image shift was "still too large to allow a design of a zoom system with a range larger than 4 to 1." Plaintiff's Exhibit 31 at p. 1196. The 686 device actually provided for a range of 3 to 1, whereas the Richter device was designed to provide a range of 9 to 1. Kaprelian, plaintiff's expert witness, admitted that "if you took the system and changed the zoom range from 9 to 1, to say, 3 to 1, you should be able to reduce the excursions from the film plane between compensation points." (Tr. p. 583).

[14] The requirement of "full" disclosure is no mere technicality, but is basic to the underlying policies of the patent law. A principal purpose of the patent law is to make sure "that the subject of the patent

By phrasing its claims and specifications in the broadest possible terms, the 686 patent effectively posed a threat to every conceivable optically compensated varifocal de-

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will be dedicated ultimately to the public." *General Electric Co.* v. *Wabash Appliance Corp.*, 304 U. S. 364, 369 (1938).

"Specifications of the patent, including the description and the claims, constitute a contract between the public and the patentee, under which the public, through the government, agrees that in consideration of the inventor's disclosure of his teaching and his grant of the right to use the same after his monopoly expires, he shall be protected in his exclusive use during the life of the patent." *National Carbon Co.* v. *Western Shade Cloth Co.*, 93 F. 2d 94, 96 (C. C. A. 7, 1938).

"In return for the monopoly that the government grants to the inventor for a term of years, he is to disclose enough about his device to bring it within reach of the public when his patent expires. A disclosure that would enable a man of exceptional training and experience in the art, but not a person of ordinary skill in it, to make the device might not serve this important public purpose. Persons wishing to produce the device when the patent expires might not be able to find such a man; in fact, there might be no such man. The statute therefore requires the applicant for a patent to describe his invention, and how to make and use it, so that 'any person skilled in the art' can make use of it." *International Standard Electric Corp.* v. *Marzall*, 184 F. 2d 592, 593 (D. C. Cir. 1950).

In the instant situation, the disclosure is so scanty that not only would the ordinary lens designer find it an almost impossible task to reconstruct the device, but even the most exceptional lens designer would encounter grave difficulties.

Section 112 seeks not only to enable the public to reconstruct the device at the expiration of the patent but also "to guard against unreasonable advantages to the patentee and disadvantages to others arising from uncertainty as to their rights. The inventor must 'inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not.'" *General Electric Co.* v. *Wabash Co.*, 304 U. S. 364, 369 (1938).

By phrasing the specifications and claims in the broadest possible language, the inventor sought to extend the range of equivalents to every conceivable method of compensation optically for image shift in varifocal devices. But, "Certainly, if we are to be consistent with Rev. Stat. 4888, a patentee cannot obtain greater coverage by failing to describe his invention than by describing it as the statute commands." *Halliburton Co.* v. *Walker*, 329 U. S. 1, 13 (1946).

vice. Thus, plaintiff contended throughout the trial that not only the defendant's device, but their own 817 as well, would infringe 686. The following chart points up some of the differences between these devices:

	686	*817*	*Alleged Infringing Devices*
Front Lens	Movable for focusing purposes only; no variable power; but of high positive power.	Composed of separate lenses movable in relation to each other to vary their combined power from a negative power to a very low positive power. May have zero power.	Movable for focusing purposes only; no variable power.
Variator	Of positive power. Varies size of image by itself. Necessary to have field lens as element in variator assembly. Image never formed to the right of 2d variator lens.	Of positive power. In order for this lens to magnify the image must have erector lens in place.	Of negative power. Variator produces magnification without stationary third lens.
	Variator has greater power than compensator.	Compensator has greater power than variator.	Variator and compensator are of equal power.
	Magnification occurs when variator is moved away from front lens.	Magnification occurs when variator moves toward the front lens.	Magnification occurs when variator is moved away from the front lens.
Erector	Of positive power. Erects the image formed by the first 2 lenses. The image is real.	Of negative power. Erects the image.	Of positive power. Inverts the image formed by the first 2 lenses.
Compensator	Of positive power. As zoom group is moved from front lens, real image formed by the erector is changed to a virtual image by the compensator.	Of positive power. Image formed by this lens is real and inverted. Lens changes the size of the image.	Of negative power. Changes real, inverted image to an erect and virtual image. This occurs throughout zoom operation.
Relay	Forms a real inverted image.	Does not invert the image.	Forms a real inverted image.

In addition, plaintiff contended that the Pan-Cinor 60 device, Defendant's Exhibit A, would also infringe 686, although that device does not have a front lens. The variations in the position and formation of images, real and virtual, in these devices, are substantial and extremely diverse. The only thread running through each of these lens devices is that they all contain at least 4 lenses designed to accomplish the varifocal effect optically. They each contain a lens which *somehow* magnifies the image, one which then *somehow* inverts that image, one which *somehow* compensates for image shift and one which *somehow* takes the image formed by the compensator and transfers it to the desired focal plane. In addition, the so-called variator and the compensator lens assemblies move as a unit in relation to the stationary lenses.

If the claim of 686 may be read this broadly, then clearly those claims can have no validity against the prior art patents of Michel and Richter which also contain an optically compensated varifocal lens system, with a lens which magnifies the image, one which inverts that image, one which compensates for image shift and one which transfers that image to the desired focal plane. In both Richter and Michel, the variator and compensator lens assemblies move as a unit in relation to the stationary lenses.

In addition, the prior art patents also fully disclose mechanisms for holding and moving these lenses which are concededly equivalent to those shown in 686.

Even assuming that 686 is invention and that the invention is sufficiently disclosed, its claims could not extend beyond the equivalent of that invention. In this case, those equivalents could not conceivably extend beyond an S compensation curve system. At most, that is all that could possibly be considered novel in the patent.

The defendant's device is not based upon an S curve compensation system, but rather upon a W curve symmetrical compensation system permitting four points of exact focus and a substantial decrease in deviations throughout the rest of the operational range. This is more than a mere improvement, it is a distinct theory beyond the range of equivalents to which 686 would be entitled even were it disclosed invention.[15] In fact, the defendant's device is much closer to the prior art patents than it is to patent 686. The plaintiff cannot preclude all other optically compensated varifocal lens systems for motion picture use, merely because Dr. Back was the first to think of utilizing varifocal lenses for this purpose.

As Judge Learned Hand said:

> "A patentee may indeed monopolize all the uses of his invention, but we must first learn what that invention is. It is not the idea in vacuo; the consideration for the grant is a chart which others can follow, not an intimation they must work out themselves. If they embody the idea by quite different means, they need pay him no tribute; he gets his reward for marking the path, not for pointing to the goal * * *." *Grubman Engineering & Mfg. Co. v. Goldberger*, 47 F. 2d 151 (C.C.A. 2, 1931).

I find that the defendant has overwhelmingly satisfied its burden of proving that patent 686 is invalid. Furthermore, plaintiff has failed to prove that the patent is infringed by defendant's devices.

We now come to the second patent in suit, Back 817. Plaintiff contends that the defendant's devices infringe

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[15] The Patent Office accepted this as a validly distinguishing feature when they granted a patent for defendant's devices to the assignor of defendant's manufacturer (Defendant's Exhibit H; Column 1, lines 41-49).

claims one and three of this patent. Defendant alleges here, as before, that the patent is invalid and that alternatively, it is not infringed. As noted earlier, patent 817 was granted as an inventive advance over Back 686. Here again, however, the most pertinent prior art was not considered by the Patent Office. Particularly, the Michel and Richter patents and the Cuvillier patents, U. S. Patent No. 2,566,485, issued on September 4, 1951, over a year before the filing date of patent 817.

Plaintiff claims two principal advances in this patent.

> "817 is an improvement on 686. It adopts and uses the basic attachments of 686 in that it has the identical three-barrel, five-lens attachment. The only differences lie in that in 817 a negative erector lens is introduced, instead of a positive lens, and a change is made in the front lens. Instead of moving the entire front lens for focusing, the front lens is now composed of two elements and spaced apart and variable, so that they can be moved with respect to each other for focusing, but after such focusing remains fixed in position. The effect of this change was that instead of using real images as were used in 868, virtual images were used in 817 * * *. The effect of the use of virtual images was to enable the plaintiff to make a shorter and better lens. However, the functions, purposes and operation of each lens group still remain the same. The change was merely an improvement." Plaintiff's Summation Brief, pp. 14-15.

The initial question is whether these changes constitute invention. Firstly, as to the substitution of a negative erector lens, there is clearly no invention. The erector lens in both Richter and Michel was negative. In both

of those cases, virtual images were utilized. The inventor, Dr. Back, and plaintiff's expert witness, Kaprelian, testified repeatedly throughout the trial that it was well known in the art that negative lenses could be substituted for positive ones, and that they would produce virtual rather than real images. (Tr. pp. 102, 247).

It was equally well known that the utilization of virtual images would permit a shorter optical device reducing the light transmission problem and allowing for lenses for lower power.

Moreover, the defendants were selling an optically compensated varifocal device with a negative erector lens for use in conjunction with motion picture cameras, a year before Dr. Back filed his 817 application. Defendant's Exhibit A. This device, called Pan-Cinor 60, made in accordance with the Cuvillier patent, resembles 817 in all respects (including virtually identical ratios of focal lengths—see Defendant's Exhibit P and Tr. pp. 386-390) except for two. The first difference is that Pan-Cinor 60 is an afocal camera attachment rather than a complete camera system. For this reason, plaintiff contends that Pan-Cinor 60 and Cuvillier may not be considered anticipatory prior art. The distinction between afocal and complete objective systems, however, is not at all material in the art. Dr. Back agreed that "the difference between a complete zoom lens and an afocal attachment of the zoom lens is that in the relay part of the afocal attachment you omit parts that correspond to a camera objective whereas in the complete zoom lens you include the parts which would normally be supplied by the camera objective lens." (Tr. p. 192).

In fact, in the 686 patent, the inventor clearly explains how that device, which was a complete objective, may be converted into an afocal attachment by merely remov-

ing half of the relay group.[16] Certainly, adding an additional relay lens does not constitute an inventive advance over Cuvillier.

The second element distinguishing 817 from Pan-Cinor 60 is that the latter does not contain a front lens, whereas the former contains a front lens of variable power. In Pan-Cinor 60, the variator lens serves the same function as a front lens. It is variable for focusing purposes and then becomes fixed during the zoom operation. The addition of a front lens that is variable for focusing purposes, was certainly not new in the art, since the 686 device contained such a front lens. The only new element in 817 is that there is a gap between the two elements comprising the front lens assembly which may be varied to increase or decrease the combined power of that lens from a relatively slight negative power to a relatively slight positive power. The front lens is 686 on the other hand is not of variable power. The patent, however, does not disclose at any point why this makes any difference. The only function attributed to the front lens in the patent is that it is variable for focusing.[17] Furthermore, in the alleged infringing devices, the two front lens elements are cemented together as they are in 686. Since the plaintiffs contend that the defendant's front lens is equivalent

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[16] If only half a relay system with an equivalent focal length equal to the focal length of a standard motion picture objective is used the varifocal lens becomes an afocal system (both focal points at infinity). Such a system can be placed in front of any standard camera lens thereby converting the latter into a varifocal lens." (Column 5, lines 6-13). Dr. Back also indicated that he considered Pan-Cinor 60 an infringement of 686 although the Pan-Cinor device was an afocal attachment.

[17] During trial, Dr. Back testified that the "front lens has power also to reduce the zoom deviation because that has something to do with it." (Tr. p. 130). This is not indicated in the patent.

to the front lens in 817, the front lens in 686 must necessarily be equivalent and anticipate the front lens in 817.

Plaintiff's witnesses testified that Pan-Cinor 60 gave inferior picture quality because it did not have a front lens. All that 817 does is add a front lens to the disclosures in Cuvillier and Pan-Cinor 60. Dr. Back conceded that 817, unlike 686, would work without a front lens, but he stated that the picture quality would be inferior without that lens. (Tr. p. 198).

Even if the variable gap front lens in 817 is somehow effective in enabling the achievement of a sharper image, it certainly cannot rise to the dignity of a patentable advance. Nor can Pan-Cinor 60 be validly distinguished on this basis.

The one additional distinction between Pan-Cinor 60 and 817 is the mechanism by which movement of the variator and compensator lenses is affected. Plaintiff concedes, however, that the different methods are equivalent. (Tr. pp. 147 and 256).

Even if the 817 patent could somehow be considered invention, its range of equivalents would be extremely small. They would certainly not cover the defendant's devices which, as stated earlier, operate on a different theory of optical compensation permitting four points of exact focus and a smaller curve of deviation between those points.

In addition, if there is invention in having the variable gap front lens, that invention is not infringed by the defendant's devices because they do not have front lenses of variable power.

Patent 817 is invalid because of anticipation by Richter, Michel, 686, Cuvillier and Pan-Cinor 60. Even if it

were invalid, however, it would not be infringed by the accused devices.

We come lastly to defendant's counterclaim based on their contention that it was unfair competition for the plaintiff to send certain notices to the trade relating to the bringing of the instant action. There seems to be no doubt that this court has jurisdiction over this matter (*Cutting Room Appliances Corp.* v. *Empire Cutting Machine*, 186 F. 2d 997 (C. A. 2, 1951). However, I find the claim itself without merit. Beyond a doubt, the notices were sent in good faith. As was clearly enunciated in *Kaplan* v. *Helenhart Novelty Corp.*, 182 F. 2d 311, 314 (C. A. 2, 1950),

> "* * * it is not an actionable wrong for one in good faith to make plain to whomsoever he will that it is his purpose to insist upon what he believes to be his legal right, even though he may misconceive what those rights are * * * And this has long been recognized in respect to patent rights."

Settle decree promptly in accordance with this decision. The exceptional circumstances necessary for the allowance of reasonable attorney's fees (35 U. S. C. Sec. 285) are not present in this case.

Dated: New York, N. Y.
June 5, 1957.

IRVING R. KAUFMAN
U. S. D. J.

CLARK, *Chief Judge:*

Plaintiff, assignee of patents Nos. 2,454,686 and 2,718,817 involving varifocal lenses for moving picture and television cameras, appeals from an adverse judgment in an action for patent infringement. The court below held plaintiff's patents invalid for want of invention, insufficient disclosure, and excessively broad claims, and alternatively held that defendant's device did not infringe these patents. This involved all the claims of the first patent and Claims 1 and 3 of the second patent, these being the claims in suit. In addition, the court awarded judgment on defendant's counterclaim enjoining plaintiff from charging defendant's customers with infringement of the above patents. D. C. S. D. N. Y., 152 F. Supp. 328.

The basic patent in suit, No. 2,454,686, is for an optically compensated variable focal lens system useful in television and motion picture photography to vary the magnification of a continuously photographed or televised moving scene. Thus the cameraman may produce a continuous enlargement of the image without moving the camera from a fixed position. This "zoom" effect is accomplished by the simple expedient of moving two lens systems lineally in relation to three fixed lens systems. Of the three fixed systems, one, the front lens, focuses the camera on the object to be photographed and serves the same function as the ordinary front lens on any camera, and the third, the relay lens, relays the image to the focal plane. The second fixed lens—the so-called erector—and the two movable lenses are the heart of the Zoomar lens. They vary the magnification of the image as focused by the front lens while maintaining the image's sharp focus.

Plaintiff's second patent, No. 2,718,817, is merely an improvement on the basic patent. By changing the structure of several of the individual lens elements and reducing the number of elements, it shortened the over-all length of the device, reduced its Petzval curve tendencies, and increased the light transmitted through the lens. The basic structure of three fixed lenses and two movable ones, which accomplish the "zoom" effects, remains the same in this later patent.

Prior to plaintiff's invention similar effects in motion pictures were achieved only by moving the entire camera toward or away from the object photographed, employing a dolly or traveling camera support, or by using variable focal length lenses utilizing complex mechanical devices which simultaneously increased the power of the camera lens and moved the film plane of the camera to correspond to the resulting shift in the lens's focal plane. There seems to be no question, as Judge Kaufman found, that the plaintiff's patents represented an important advance over either of these previous devices. But the judge also found that plaintiff's patents had been anticipated by the disclosures made in two earlier patents, Richter, No. 2,078,586 and Michel, No. 2,209,532. Those patents therefore require careful consideration.

The Richter patent, issued in 1937, dealt with a device for illuminating an object being viewed through a microscope. It discloses an arrangement of three lenses, similar to the "zoomar" component of plaintiff's patents, which Richter used to vary the cross sectional area of a cone of light beamed on the object plane of a microscope without moving the image of the light source or of the lamp con-

denser from a desired position where a uniform illumination of the entire area of the illuminated field is achieved.[1] This effect—changing the magnification power of the lens while maintaining an unchanged focal plane—is essentially similar to that achieved by the Zoomar lens, and Richter similarly accomplished it by moving two lenses lineally in relation to a third lens. Since, however, uniform illumination, rather than a sharp focus, was the aim of the Richter device, it had no additional lenses corresponding to the front and relay lenses found on the Zoomar lens.

We need not decide whether, standing alone, Richter's disclosure of an optically compensated variable focal length lens system would constitute an anticipation of plaintiff's application of the device to motion picture and television cameras. For the Michel patent, issued in 1940, comes closer to plaintiff's invention. Michel's device for use in photomicrography employed a lens arrangement essentially identical to plaintiff's to take still photographs at varying magnifications of the image without changing the microscope objective or refocusing the instrument. Like the Zoomar lens, Michel's consisted of two lenses lineally movable in relation to three fixed lenses. All five lenses roughly correspond in position and function to the Zoomar lens components, the most significant difference being that the axis of the front lens in Michel (the microscope objective) was not in a direct line with the other lenses, and the light passing through that lens was reflected back to the other lenses by means of a mirror or semi-transparently silvered surface. Although the Michel device seems never to have been produced, we may not disregard it as an

[1] Richter found uniform illumination to be most efficiently achieved when the so-called Kohler condition occurs—when an image of the light source lies in the front focal plane of the microscope condenser and an image of the lamp condenser lies in the rear focal plane of the microscope condenser.

abandoned experiment in our consideration of the prior art. As the above described lens, with its varying magnification function, was only an incidental aspect of the complex Michel device, there is no necessary inference that defects in this lens were a cause of the abandonment. *Picard* v. *United Aircraft Corp.*, 2 Cir., 128 F. 2d 632, 633, certiorari denied 317 U. S. 651.

The test of anticipation, as the lower court correctly held, is whether "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains"—here, an ordinarily skilled lens designer. 35 U. S. C. §103; *American Stainless Steel Co.* v. *Ludlum Steel Co.*, 2 Cir., 290 Fed. 103. This concept of invention, particularly elusive where applied to a combination of known elements, is never susceptible of mechanical application. *Great Atlantic & Pacific Tea Co.* v. *Supermarket Equipment Corp.*, 340 U. S. 147; *McClain* v. *Ortmayer*, 141 U. S. 419, 427. But in this case the test is clearly met. Invention is more than recognition of latent qualities in prior art without any physical or objective change in that art. *General Elec. Co.* v. *Jewel Incandescent Lamp Co.*, 326 U. S. 242; *Ansonia Brass & Copper Co.* v. *Electrical Supply Co.*, 144 U. S. 11; and see dissenting opinion of L. Hand, J., *Jungersen* v. *Baden*, 2 Cir., 166 F. 2d 807, 811, quoted in dissenting opinion of Frankfurter, J., *Jungersen* v. *Ostby & Barton Co.*, 335 U. S. 560, 568. Here plaintiff's only objective or physical change of Michel's camera lens is the substitution of a motion picture camera for a still camera and aligning the front lens axis with the axis of the other lens systems. This modification "is wanting in any unusual or surprising consequences from the unification of the elements here concerned." *Great Atlantic & Pacific Tea Co.* v. *Supermarket*

Equipment Corp., supra, 340 U. S. 147, 152. Nor does the simple adaption of the lens from still photomicrography to motion picture photography validate the Zoomar patent. For it is "settled law beyond the need of citation that the adaption of a machine for a new use does not entitle one to a patent if the idea of the new use is suggested by analogous art and invention may not be perceived in the adaption." *Buffalo-Springfield Roller Co.* v. *Galion Iron Works Mfg. Co.*, 6 Cir., 215 F. 2d 686, 688. And since the Patent Office did not consider the Michel and Richter disclosures when it approved plaintiff's application, there can be no strong presumption of validity from its action. See *Georgia-Pacific Corp.* v. *United States Plywood Corp.*, 2 Cir., July 1, 1958.

Stressing the commercial success of the Zoomar lens, plaintiff relies on what it asserts to be a modified standard of invention under 35 U. S. C. §103, as interpreted in *Lyon* v. *Bausch & Lomb Optical Co.*, 2 Cir., 224 F. 2d 530, certiorari denied *Bausch & Lomb Optical Co.* v. *Lyon*, 350 U. S. 911. The Supreme Court has not had occasion to interpret §103 in this respect, and we have not definitively ruled on the question in this circuit. Nor need we do so in this case, for a strong inference of originality does not arise here from plaintiff's commercial success. Plaintiff's first patent followed only six years after the Michel device, and a shorter time after the development of anti-reflection lens coatings. And plaintiff's proof does not clearly show what portion of its considerable commercial success is attributable to its later improvement patent which is closely related to a non-accused lens of defendant's, the PanCinor 60, developed in the interval between plaintiff's two patents.

Because we held that the prior art as evidenced in the Richter and Michel patents anticipates plaintiff's patents,

it is unnecessary to reach the other grounds of invalidity found by the lower court. Plaintiff questions the propriety of the district court's injunction restraining it from prosecuting infringement suits against defendant's customers. But the judgment in this action is itself a bar to such suits. *Bechik Products* v. *Flexible Products*, 2 Cir., 225 F. 2d 603, 606-607. And the injunction here is clearly proper. See *Helene Curtis Industries* v. *Sales Affiliates*, 2 Cir., 247 F. 2d 940; *Kessler* v. *Eldred*, 206 U. S. 285.

Judgment affirmed.

JUDGMENT

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

Civil Action No. 103-176

—o—

[SAME TITLE]

—o—

At New York, New York, in the said District, on this 11th day of September, 1958.

The plaintiff having appealed to the United States Court of Appeals for the Second Circuit from a Judgment of this Court entered June 14, 1957, and said appeal having been duly argued, and the said United States Court of Appeals having

ORDERED, ADJUDGED AND DECREED that said Judgment of this Court be affirmed, it is hereby

ORDERED, ADJUDGED AND DECREED that the Judgment of the United States Court of Appeals for the Second Circuit entered in that Court on August 18, 1958 be and the same hereby is made the Judgment of this Court, and it is further

ORDERED, ADJUDGED AND DECREED that the defendant recover from the plaintiff its costs and disbursements in the sum of $951.20/100 as taxed in the United States District Court, Southern District of New York, with interest

thereon from the date of this decree until paid and that the defendant have execution therefor.

Dated: September 17th, 1958.

DAVID N. EDELSTEIN
U. S. D. J.

Judgment entered the 18th
day of September, 1958.

HERBERT A. CHARLSON
Clerk, U. S. D. C.